



COMPONENTS NEWS

NEW INTEL PROCESSORS

Intel has added some new processors to its range. The high-end 3.8GHz 670 processor supports Intel's 64-bit command set, dubbed Extended Memory 64 Technology (EM64T). It has 2MB of cache and an effective front-side bus (FSB) speed of 800MHz. It is priced at \$851 (around £470). There are also new 500 series processors with 1MB of cache and 800MHz FSB speeds that support EM64T. These are the 571 (3.8GHz), 561 (3.6GHz), 551 (3.4GHz), 541 (3.2GHz), 531 (3GHz) and 521 (2.8GHz). They are all one number higher than those in the existing range, which have the same clock speeds but don't support EM64T. Prices start at £90 for the 521.



ATI CROSSFIRE ARRIVES

ATI has released a technology to rival nVidia's SLI. The Crossfire system, similar to nVidia's SLI, requires an ATI-based motherboard with two PCI-E x16 slots. However, ATI's technology requires a special master card. Any existing X800 series card can be used as the slave, even if it has a lower specification than the master.

The cards are connected outside the case via a DVI cable. The Crossfire system supports different methods of splitting the workload. These include alternate frame rendering and splitting the image into a checkerboard, so each card renders alternate blocks. Sapphire will probably be first to market the technology.

REVIEW BAREBONES CASE

BIOSTAR IDEQ 330P

RATING ★★★★★

PRICE £215 inc VAT

SUPPLIER www.microdirect.co.uk

DETAILS www.biostar.com.tw

The BTX design provides a more effective way of cooling a system. One large fan passes air over the processor and motherboard components. It's an Intel standard, but this hasn't stopped Biostar from applying the technique to its AMD systems, such as the mini IDEQ 330P. A single fan blows air from the front of the case over the processor and motherboard into an air funnel, which connects to a secondary fan that blows hot air out of the case. It's efficient and quiet, too.

This barebones case is surprisingly well decked out. It uses an nVidia nForce 4-based motherboard, so you can install any Socket 939 processor. We installed an Athlon 64 3400+ with 1GB of DDR memory. The system scored 121 in our application benchmarks and 4,202 in PCMark04. These scores are OK, though not as good as those of the Abit AX8 motherboard reviewed opposite.

Performance isn't the only consideration, though; features are just as important. The use of the nForce 4 chipset means there's Gigabit Ethernet protected by nVidia's hardware firewall, eight-channel audio and a full complement of USB2 and FireWire ports. The case design is also impressive; there's room for PCI, PCI-E x16 and x1 PCI-E slots. Biostar also includes a memory card reader.

Another important consideration is how easy the case is to build. On most counts, Biostar gets it right. The case comes apart with thumbscrews, while the main chassis, which holds the optical drive and hard disks, flips up like a car bonnet, giving easy access to the processor and memory slots. The



case provides two hard disks, both of which have Serial ATA cables in place. The hard disks can also be put into a RAID partition.

The only problem we had was with the optical drive. The drive uses an arm attached to a button to hit the eject button. Unfortunately, the arm on our system dropped off and stopped working, and would need to be glued back on to work properly. The 300W power supply could cause problems, too. It won't support a full complement of peripherals and a powerful graphics card. It's also difficult to replace due to its unusual size. Software installation is easy. The driver CD provided automatically installed all the drivers we needed in one click. The case is also attractive, with a piano-black coating.

The IDEQ 330P is great value and well designed, though the small power supply and poor optical ejection mechanism count against it.

David Ludlow



Attractive; easy to build



Poor optical drive ejection mechanism

SPECIFICATIONS nVidia nForce 4 chipset, supports AMD Socket 939 processors, two DIMM slots, one PCI, one PCI-E x16, one PCI-E x1 slot, one 5¼" drive bay, two 3½", 7-in-1 memory card reader, three USB2, one Gigabit Ethernet, two FireWire ports, eight-channel audio. Part code BARBIOIDQ330P

HOTLIST GRAPHICS CARD

GE CUBE X800 XL

RATING ★★★★★

PRICE £205 inc VAT

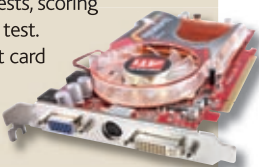
SUPPLIER www.sphinxcomputers.com

DETAILS www.gecube.com



Based on ATI's Radeon X800 XL chip, GeCube's graphics card perfectly balances price against performance. With 16 pixel pipelines, a 500MHz core speed and 1GHz of GDDR3 memory, it has fantastic specifications. These shone through in our tests, scoring 61.4fps in our Doom 3 test.

This is an excellent card for those that want high-end performance without the huge cost.



SPECIFICATIONS ATI Radeon X800 XL, 256MB GDDR3 memory, PCI-E x16 interface, TV out (composite, component and S-video). Part code VC26057

HOTLIST PROCESSOR

INTEL Pentium 4 550

RATING ★★★★★

PRICE £181 inc VAT

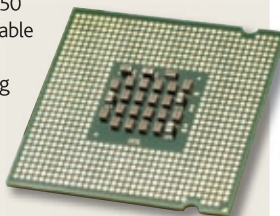
SUPPLIER www.pcnextday.co.uk

DETAILS www.intel.com



The Pentium 4 550 runs at a respectable clock speed of 3.4GHz, providing ample raw power, and is particularly strong at video

compression. The processor will work with any LGA775 motherboard, which also means you can use the latest DDR2 memory and PCI-E graphics cards.



SPECIFICATIONS 3.4GHz clock speed, LGA775 connector, 800MHz front side bus. Part code BX8-547PG3400E

HOTLIST GRAPHICS CARD

PALIT GeForce 6200 TurboCache

RATING ★★★★★

PRICE £40 inc VAT

SUPPLIER www.scan.co.uk

DETAILS www.palit.com.tw



Until recently, graphics cards that used system memory performed poorly, but the PCI Express interface has changed all that. Palit's GeForce 6200TurboCache uses between 64MB and 256MB of system memory and suffers no loss in performance. At this price, it's an excellent card for anyone who is building a PCI-E system on a tight budget.



SPECIFICATIONS nVidia GeForce 6200TC, 64MB (256MB system memory) RAM, PCI-E x16


REVIEW MOTHERBOARD

ABIT AX8

RATING ★★★★★

PRICE £70 inc VAT

SUPPLIER www.microdirect.co.uk
DETAILS www.abit.com.tw


Abit's AX8 is based on VIA's K8T890 chipset. While this chipset might not have as many features as its nVidia-manufactured rivals, it is a lot cheaper.

The AX8 has a decent range of options. It supports Socket 939 AMD processors and dual-channel DDR memory over four DIMM slots. We tested it with an Athlon 64 3400+ and 1GB of memory in a dual-channel configuration. It scored 130 in our application benchmarks and 4,421 in PCMark04, significantly better than our reference

computer, and well ahead of Biostar's iDEQ 330P, which is reviewed opposite.

Hardware error detection is easy as there is an LED readout on the motherboard. This gives you an error code that you can look up in the manual. However, we had a bit of trouble installing Windows, as our Serial ATA (SATA) hard disk wasn't detected by the installer. To get it working, we had to use the driver floppy disk provided as the installer doesn't recognise other media. This was

fine for us, but if you don't have a spare floppy disk drive you could be in trouble.

Once in Windows, Abit's driver CD provides all you need to get up and running, including the µ Guru overclocking software. This utility allows you to adjust your processor's speed. However, this is only recommended for those who are confident about overclocking.

This is a well-priced motherboard that supports all recent Socket 939 Athlon 64 processors.

David Ludlow

✓ Great value for money

✗ Installation can be difficult

SPECIFICATIONS Via K8T890 chipset, supports AMD Socket 939 processors, four DDR memory slots, one Gigabit Ethernet port, four SATA ports (2x RAID drives), one PCI-E x16 slot, three PCI-E x1 slots, two PCI slots, three IDE ports. **Part code** AX8

REVIEW GRAPHICS CARD

ASUS AX700-X

RATING ★★★★★

PRICE £70 inc VAT

SUPPLIER www.cccc.co.uk
DETAILS www.asustech.com


ATI's Radeon X700 graphics chip didn't set the world on fire with its graphics performance, and it was expensive too. But there is now a light version of the chipset. Asus's AX700-X is the first PCI-E card we've seen to be based on this X700 LE chipset.

This graphics card is well priced at comfortably less than £100, almost £40 less than a regular X700. It's technically a cut-down version of the original, but the core speed of 400MHz and 128MB

of DDR memory running at 1GHz are great for a card at this price.

Its benchmark scores were impressive. The AX700 scored 5,628 in 3DMark05 and in Doom 3 it managed 22.1 frames per second (fps) with 4x full-scene anti-aliasing (FSAA) turned on at a resolution of 1,024x768. When we dropped this to 2x FSAA, we got a much-improved score of 30.6fps. There is only 128MB of memory, so it will struggle

with higher resolutions, but it still does well for a basic graphics card and can play the latest games at medium detail settings.

The AX700 has all the features we would expect from a modern graphics card, including DVI, analogue and TV-out ports. Asus provides software for adjusting onscreen brightness and contrast, but there are no games or DVD playback software.

This is a fine card for the less-demanding user. However, Sparkle's GeForce 6600 is similarly priced and gives slightly better performance.

David Ludlow

✓ Cheap; OK performance

✗ Doesn't come with much software

SPECIFICATIONS ATI Radeon X700 LE chipset, 128MB DDR RAM, analogue, DVI and TV-out. **Part code** AX700-X

HOTLIST SOCKET 939 MOTHERBOARD

ECS KN1 Extreme

RATING ★★★★★

PRICE £84 inc VAT

SUPPLIER www.wirral_it.co.uk
DETAILS www.ecs.com.tw


Based on nVidia's nForce 4 Ultra chipset, ECS's KN1 Extreme is a high-performance motherboard. Its score of 117 in Shopper's application benchmarks and 4,581 in PCMark04 showed this to be the case.

It has loads of features onboard thanks to nVidia's chipset and costs well under £100, making it the perfect foundation for a high-performance AMD-based computer.



SPECIFICATIONS nVidia nForce 4 chipset, supports AMD Socket 939 processor, four DDR memory slots, two LAN ports, 1 x16 PCI-E, 2 x1 PCI-E, 3 PCI, 6 SATA, 2 IDE. **Part code** KN1Extreme

HOTLIST PROCESSOR

AMD Athlon 64 3400+

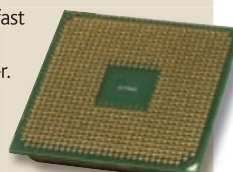
RATING ★★★★★

PRICE £118 inc VAT

SUPPLIER www.dabs.com


AMD's Athlon 64 3400+ on Socket 754 is nearly as fast as a Socket 939 Athlon, and significantly cheaper. Combine it with one of the many cheap Socket 754 motherboards and you can build a powerful computer on a tight budget.

With the release of a 64-bit version of Windows just around the corner, this processor's performance is just going to get better and better.



SPECIFICATIONS 2.4GHz clock speed, Socket 754, 2x 800MHz HyperTransport bus. **Part code** ADA3400AXB0X

HOTLIST LGA775 MOTHERBOARD

ECS PF21 Extreme

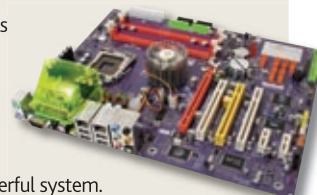
RATING ★★★★★

PRICE £100 inc VAT

DETAILS www.wirral-it.co.uk


Featuring Intel's 925XE chipset, ECS's PF21 Extreme motherboard provides the base for a powerful system. It supports 1,066MHz frontside bus (FSB) processors and DDR2 RAM, includes a 54g wireless adaptor and has six SATA ports.

For future upgrade potential you can't go wrong with this board, and it's very good value, too.



SPECIFICATIONS Intel 925XE PCI Express chipset, four DDR2 slots, three PCI slots, two IDE ports, six SATA ports, two PCI-E x1 slots, one PCI-E x16 slot